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PREPARATION IN THE ELEMENTARY SCHOOL FOR INDUSTRIAL AND DOMESTIC LIFE

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The aim of public-school education today, whatever it may have been in the past, is not to drive knowledge into the pupils nor even to draw it out. It is a much broader and higher one, viz., individual and national efficiency. This general aim involves at least four special aims in the case of each individual pupil—bodily well-being, vocational ability, a modicum of culture, social service. These, unfortunately, while their importance is admitted by most educators, do not all receive a fair share of attention in the elementary school. Some attention is usually paid to the first and, in the best schools, a little to the last; but by far the most time is devoted to means leading toward the third (culture), while the second item in the analysis (vocational ability) is almost wholly neglected. The schools thus prepare directly for commercial and professional life, in which the three R's are the primary tools; but hardly at all for the various walks of industrial and domestic life, in which other tools are needed. This is doubtless due to the fact that our grammar schools, as their name indicates, are lineal descendants of the schools attached in mediaeval times to churches and monasteries, whose function was to teach boys to read and copy classical manuscripts and to prepare for the priesthood. The great majority of boys, who were destined for agricultural and industrial life, got their training

on farms or as apprentices to members of trade-guilds; while girls, naturally, got their training for domestic life in the home. All this has been changed within the past century by the rise of the factory system, the consequent growth of cities and inrush to them from the country, the decay of the system of apprenticeship, the disappearance of domestic arts and activities, and the establishment of free public schools. These last, while they have rendered incalculable service to the nation, have none the less tended to create and perpetuate an academic prejudice against manual work; and it is only in recent years that educators have been learning to realize the dignity of labor.

It is generally admitted that the public schools do not prepare their pupils for industrial and domestic life; and it seems reasonable to attribute to this defect the lack of interest in school work, on the part of many boys and girls, and their rapid dropping out of school from the age of twelve and upward. This tendency is shown clearly and graphically in Professor Thorndike's recently published study entitled *The Elimination of Pupils from School,* issued as a bulletin of the Bureau of Education, Washington. Professor Thorndike, dealing first with elimination by grades, estimates "that the general tendency of American cities of 25,000 and over is, or was at about 1900, to keep in school out of 100 entering pupils 90 till Grade IV, 81 till Grade V, 68 till Grade VI, 54 till Grade VII, 40 till Grade VIII, and 27 till the first year of high school." Putting the matter in another way, Professor Thorndike estimates the dropping out from Grade IV to Grade V as 9 per cent. of those entering school, from Grade V to VI as 13 per cent., from Grade VI to VII as 14 per cent., from Grade VII to the last grammar grade (usually VIII, but sometimes IX) as 14 per cent., and from the grammar school to the high school as 13 per cent. Dealing with elimination by age for a group of 25 cities in different parts of the country, he tells us that, of 100 pupils in school at eight, practically none drop out before twelve, while 9 leave when twelve years old, 18 at thirteen, 23 at fourteen, 17 at fifteen, 13 or 14 at sixteen, and 8 at seventeen.

Of the large number of boys and girls who thus leave school as soon as possible, between the ages of thirteen and fifteen, a

considerable proportion, as trades are not open to them, drift into unskilled or low-grade work. This is brought out clearly in the *Report of the Massachusetts Commission on Industrial and Technical Education* (April, 1906), which states that "33 per cent. of the children of this state who begin work between fourteen and sixteen are employed in unskilled industries, and 65 per cent. in low-grade industries; thus a little less than 2 per cent. are in high-grade industries." The following is the first of the general conclusions arrived at by the commission as a result of its investigation:

> For the great majority of children who leave school to enter employments at the age of fourteen or fifteen, the first three or four years are practically waste years so far as the actual productive value of the child is concerned, and so far as increasing his industrial or productive efficiency. The employments upon which they enter demand so little intelligence and so little manual skill that they are not educative in any sense. For these children, many of whom now leave school from their own choice at the completion of the seventh grade, further school training of a practical character would be attractive and would be a possibility if it prepared for the industries. Hence any scheme of education which is to increase the child's productive efficiency must consider the child of fourteen.

As a result of special inquiries at the leading textile centers of the state, the Massachusetts report goes on to say "that neither power nor advantage is gained by entering the industry at an early age; that the child who does enter closes behind him the door to progress to a fair living wage; that that child associates himself with our most undesirable population; that the work performed by the children is passing gradually to poorer and poorer classes of foreigners; that industrial education or education of any kind will mean that the children will not enter the industry." Those who at present do so depend, as a rule, on casual employment, become in many cases idle and discontented, are always on the verge of poverty, and are centers and causes of much social unrest.

It is thought by many people that the educational preparation in question is supplied by the manual-training high schools. This is not so: the manual-training high school does little more than the elementary school to prepare for industrial and domestic life.

It does not profess or aim to do so. Like other high schools, it undertakes to prepare for college—hence its course is predominantly academic, rather than practical; and as a consequence it attracts few pupils who mean to become ordinary workmen and workwomen. Moreover, it teaches its graduates to look beyond the workshop—to go to technical schools or colleges, to aim at industrial leadership, not to remain in the rank and file. Finally, it holds its pupils even less well than the ordinary high school. This is brought out by the following figures, the first set, taken from Professor Thorndike's study above referred to, showing the elimination from 49 high schools in different cities in terms of the median ratios of the number of pupils in the second, third, and fourth years respectively to the number in the first year; and the second set, prepared by Mr. Selvidge, a graduate student at Teachers College, doing the same for 16 manual-training and technical high schools.

TABLE I: 49 HIGH SCHOOLS

Boys—	$\frac{n_2}{n_1}=0.66$	$\frac{n_3}{n_1}=0.39$	$\frac{n_4}{n_1}=0.25$
Girls—	$\frac{n_2}{n_1}=0.70$	$\frac{n_3}{n_1}=0.45$	$\frac{n_4}{n_1}=0.31$

TABLE II: 16 MANUAL-TRAINING HIGH SCHOOLS

Boys and Girls—	$\frac{n_2}{n_1}=0.65$	$\frac{n_3}{n_1}=0.35$	$\frac{n_4}{n_1}=0.22$

These tables—where n_1 stands for the number of pupils in the first year, n_2 for the number in the second, and so on—show clearly that the retention of pupils by the ordinary high school, expressed in each succeeding year as a percentage of the number in the first year, is greater than that by the manual-training high school.

Nor does the ordinary trade school answer the purpose of holding pupils between the ages of twelve and fifteen. For these schools—which are practically all outside the public-school system—do not, as a rule, admit pupils under sixteen years of age, and in any case few boys or girls are ready to learn a special trade before fourteen or fifteen at the earliest. It is clear, therefore, that work is needed of such a nature as will appeal to the vital

interests of boys and girls from twelve to fourteen, who leave school in such large numbers from Grade VI upward, and who cannot enter a skilled trade before sixteen. Accordingly this work must be given in Grades VII and VIII, though it might well continue for a year longer, when special trade-work might begin. Public opinion is, apparently, not yet prepared for the establishment of a system of vocational training for trade, though we have already public education for commerce, law, medicine, engineering, and the teaching profession. The Massachusetts report, previously quoted, groups the callings for which children and youth need special preparation into four classes—professional, commercial, productive, and domestic—and shows that, while the first and second classes are sufficiently provided for, the other two (apart from a few scattered agricultural schools) are almost wholly neglected. The scheme about to be submitted is an attempt to fill at least the bottom of this gap in our educational system, a gap that appears in the upper grades of the elementary school. The training which should there be given should not, in the opinion of the writer, be a preparation for any particular trade, but should be directed to the cultivation of the motor powers, of habits of steady work, adaptability, and resourcefulness, and to the study of industrial processes in history and in modern life. In short, the objects aimed at should be intelligence, manual skill, and the appreciation of good workmanship.

It has been said that modern industry is machine industry, that the machine is the prime element in industrial life and must therefore form the center of any scheme of industrial education. As my scheme of work is not based on this principle, it may be well, before submitting it, to state my grounds for dissent. These are as follows: (*a*) The factory system, in its most familiar form, is not universal and not necessarily permanent, and educators must "look before and after." (*b*) There is still room for craftsmen, if they have sufficient originality and skill. (*c*) The "handy man" is not only very useful in ordinary domestic city life, but is invaluable in the country and especially as a pioneer in new lands. [The objects aimed at can be obtained through work with hand tools.] (*d*) A proper machine

equipment would involve considerable expense, which few schools could afford to bear. (*e*) Boys of thirteen and fourteen are too young to work much with machines. (*f*) They can obtain sufficient elementary knowledge of machines by demonstrations on a few working models and by occasional visits to workshops and factories. (*g*) It is difficult to make a study of machines sufficiently representative and at the same time enable the pupils to acquire adequate mechanical knowledge and skill. (*h*) There is a strong tendency to approach machines from the technical side, by analyzing their mechanical elements and classifying them from the standpoint of the engineer, and thus making the study formal and (probably) uninviting to young boys, who are interested in products rather than in means and processes of production, which, as a rule, arouse only a temporary curiosity.

Having thus cleared the way, I shall proceed to set forth the curriculum I have in view, which may be entitled "An alternative course of study in Grades VII and VIII for boys of motor type who intend to follow a trade and for girls who wish to prepare for domestic and industrial life." In other words, the course is meant to be parallel with the ordinary academic course and to be open only to pupils who have passed through Grade VI. These might not be more than twelve years old, but doubtless the majority would be thirteen at least. The guiding principles of the proposed course may here be stated. They are these:

1. The course is quite unfettered by ordinary school traditions.

2. Manual work is the core of the course and receives rather more time than the academic work.

3. Shopwork for boys—in wood, metal, and (possibly) leather—is broad and varied, thus appealing to their diverse motor interests.

4. Manual work for girls includes (*a*) housewifery—cooking, sewing, dressmaking, millinery, laundry; and (*b*) domestic science and art.

5. The work is correlated as far as possible, but not slavishly so. (As Professor Dewey says, the best correlation is in the mind of the pupil.)

6. There is provision for physical training for both sexes.

7. The English read in class should be distinctly literary, and should be studied for appreciation, not for dissection. All formal work should be done in connection with composition.

SUGGESTED COURSE

GRADE VII

Boys	Periods per Week	Minutes	Girls	Periods per Week	Hours
Shopwork (wood)—			Sewing, knitting, darning ($\frac{2}{3}$ yr.)	5	$3\frac{3}{4}$
Individual work..... 10	15	675	Machine sewing ($\frac{1}{3}$ yr.).....		
Group work..... 5			Cooking (plain).....	5	$3\frac{3}{4}$
Drawing (freehand and mechanical).....	5	225	Freehand drawing, brushwork, design.....	6	$4\frac{1}{2}$
Practical mathematics.....	5	225	Practical mathematics.....	5	$3\frac{3}{4}$
English.....	4	180	English.....	6	$4\frac{1}{2}$
Industrial geography and history.....	3	135	Industrial geography and history.....	3	$2\frac{1}{4}$
Singing.....	1	45	Singing.....	2	$1\frac{1}{2}$
Physical exercise.....	2	90	Physical exercise.....	3	$2\frac{1}{4}$
Total.....	35	1,575	Total.....	35	$26\frac{1}{4}$

GRADE VIII

Boys	Periods per Week	Hours	Girls	Periods	Minutes
Shopwork—			Cooking (plain, fancy, invalid).....	5	225
in metal ($\frac{1}{3}$ yr.)			Dressmaking and embroidery ($\frac{2}{3}$ yr.).....	5	225
in metal or leather ($\frac{1}{3}$ yr.)	15	$11\frac{1}{4}$	Machine sewing ($\frac{1}{3}$ yr.).....		
in wood ($\frac{1}{3}$ yr.)			Millinery ($\frac{2}{3}$ yr.), laundry ($\frac{1}{3}$ yr.).....	5	225
Mechanical drawing.....	6	$4\frac{1}{2}$	Domestic art.....	6	270
Applied science.....	4	3	Domestic science.....	4	180
English.....	4	3	English.....	4	180
Civics.....	1	$\frac{3}{4}$	Civics.....	1	45
Economic and business methods.....	3	$2\frac{1}{4}$	Business conditions and methods.....	2	90
Physical exercise.....	2	$1\frac{1}{2}$	Physical exercise.....	3	135
Total.....	35	$26\frac{1}{4}$	Total.....	35	1,575

8. Pupils should be encouraged to read books at home and report on them in school, especially biographies, histories, and books of travel.

9. The aim should be to prepare boys and girls to become industrious, skillful, and resourceful workers—not mere tenders of machines—and also honest, intelligent, and public-spirited citizens.

10. The school day consists of seven 45-minute periods, and there should be a minimum of home-work.

Some details may be added as to the work that should be attempted under some of the various heads.

SHOPWORK

In wood.—Trays, bookshelves, hat-racks, plate-racks, towel-racks, foot-stools, picture-frames, handkerchief-, tie-, and collar-boxes, chairs, tables, book-cases, desks, cabinets, etc., including articles for school-room use and decoration.

In metal.—Trays, bowls, vases, candlesticks, lamp-shades, picture-frames, etc.

Study of materials and tools. Original design should be encouraged.

PRACTICAL MATHEMATICS

Fundamental processes, with whole numbers, common and decimal fractions; approximations; methods of checking.

Weights and measures, including the metric system.

Practical applications, including the following: (*a*) Accounts—personal, household, business, bank; (*b*) Buying and selling—commercial discount, gain and loss, etc.; (*c*) Borrowing, lending, and investing money—notes, simple interest, bank discount; savings banks, stocks and bonds, life and property insurance; building and loan associations; (*d*) Canceling indebtedness—checks, drafts, postal money orders, express money orders.

Easy practical geometry and mensuration.

Graphical methods.

Use of simple algebraic methods, when feasible.

NOTE.—All the above could not be done in one year in the time allotted. The mathematical classes in any case would probably need to be taught in two sections, the lower section covering the more elementary part of the work, the upper the more advanced.

ENGLISH

Reading of good literature in prose and poetry; adequate practice in composition, especially friendly and business letters, replies to advertisements, and discussion of magazine articles and current events; occasional debates.

INDUSTRIAL GEOGRAPHY AND HISTORY

Sources of supply of raw materials—wood of different kinds; coal, iron, steel, copper; leather; wool, cotton, flax.

Location, origin, and growth of the leading industries.
Transportation by land and water—historical development.

BUSINESS CONDITIONS AND METHODS

Trade conditions; relations of employer and employed; division of labor; supply and demand; wages; healthy and unhealthy occupations; companies, unions, strikes, etc.; laws affecting labor; bookkeeping and office methods.

APPLIED SCIENCE

Personal, household, and municipal hygiene—lighting, heating, ventilation, drainage; simple mechanical and electrical applications; bacteria and infectious diseases; accidents and first aid; tobacco, alcohol, and narcotics.

DOMESTIC SCIENCE

Personal and household hygiene; waste products; baths and ventilation; clothing materials; dietetics, including milk and water supply; infectious diseases and their treatment; accidents and first aid; sick-nursing and rearing of children.

DOMESTIC ART

Model-, plant-, and figure-drawing; lettering and illuminating; pottery and leather-work; study of pictures, rugs, and drapery; house-furnishing and decoration.

A suitable time-table for the suggested course of work would be a school day of seven periods, beginning at 9 A. M. and ending at 4 P. M., with assembly from 9 to 9:15 A. M., recesses from 10:45 to 11 A. M., and 3 to 3:15 P. M., and a dinner interval from 12:30 to 1:30 P. M. It would not be advisable, at least in the first instance, to have work lasting longer than the usual school hours. If the course could be extended to three years, the academic work in the third year should be of a nature similar to that above outlined, while the manual work should be specialized and elective, becoming direct preparation for a particular trade.

It may be interesting, for purposes of comparison, to give the time-schedules of two English schools with much the same aim. First, that of the Borough Technical Institute Day School, London, with a three-year course for boys only; second, that of the Holbeck Preparatory Trade School, Leeds (boys). Here the second-year course is on lines similar to the first-year, but the more advanced and best pupils are encouraged to specialize. There is also specialization for a particular trade or group of trades in the third year of the London Borough Technical Institute School.

There has been much recent discussion as to whether schools

BOROUGH TECHNICAL INSTITUTE (LONDON) TIME-SCHEDULE

HOURS PER WEEK

	First Year	Second Year	Third Year
Mathematics	5	4	4½
English subjects	6	3	3
Science	4	4½	6
Mechanical drawing	4	5	5
Art	2	1½	..
French	..	3	3
Workshop	5	5	7½
Physical exercise	1½	1½	1
Total	27½	27½	30

HOLBECK PREPARATORY TRADE SCHOOL (LEEDS) TIME-SCHEDULE

HOURS PER WEEK

	First Year
Practical mathematics	5
Mechanics	3
Technical drawing	4½
Metal work	6
Woodwork	2
English	6
Drill	1
Total	27½

should prepare for vocation or avocation. The course of study suggested is frankly and primarily planned as a training for vocation; but it would be a preparation for avocation as well, culture and the proper use and enjoyment of leisure being directly aimed at in the work in English—designed to encourage reading and the love of good literature—and also in the work in art. I believe that such a course would attract and hold many boys and girls to whom the ordinary school curriculum makes little or no appeal and who at present leave school at the earliest opportunity. They would thus be greatly aided to become, not only more efficient bread-winners and home-makers, but also happier men and women and better citizens.

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THE ELEMENTARY SCHOOL AND INDUSTRIAL OCCUPATIONS

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In view of the fact that 90 per cent. of the population begin to earn a living at the age of fourteen, the demand seems reasonable that the manual-training course in our elementary school concern itself first of all with preparation for more intelligent choice of vocation; aiming both to discover mechanical tastes and aptitudes, and to impart knowledge regarding the relative advantages of different industries. It is true that when a boy reaches the right shop he will surpass in a few weeks the skill which he has acquired at school, but the important and the difficult thing is to have him reach the right shop. That the conventional course accomplishes this in certain cases is of course a matter for congratulation, but the question is whether it is accomplishing one-fifth or one-tenth of what it might.

The question arises at once as to the value of interests and abilities which may be discovered before the fourteenth year in determining vocation. No one denies that in many individual cases these early tendencies have proved to be totally misleading, but some types of aptitude, like that for music, make themselves known in early childhood, and there is much to indicate that mechanical talents and interests appear early, if at all. In a study made by the writer, of the boyhood of a large number of leading engineers, it was found that the great majority of them were absorbed almost from infancy in mechanical interest of one sort or another and have displayed remarkable ability in mechanical work—coupled in many cases with noticeable lack of either interest or ability in such foreign subjects as history and literature. And further, these early interests often showed very close relation to the special line of success in later life. Many of the mechanical engineers had built working steam-engines in boy-

hood, while the play of great electricians had been with telegraph relays, dynamos, and telephones.[1]

Every teacher of manual training knows boys from ten years of age upward who had been failures in school and enigmas at home, but, on entering the shop emerged into a new life, and worked there with a persistence and interest amazing to parent and principal. One such may develop an initiative which suggests a future engineer, while another is so dependent on oversight as to promise no more than the journeyman grade of ability, but the suggestion gained regarding vocation is equally valuable to both pupils, and the school is rendering a most important service in developing such interest in the industrial life.

Industry, however, is not one but many. It demands from its workers a great variety of talents, mental and motor. Psychology and experience unite in assuring us there is really no such thing as "mechanical ability," but rather a multitude of mechanical abilities, and these scattered in a most promiscuous way. Frequently, of course, one person proves to be endowed with a group of them but it is always dangerous to prophesy which ones will appear together. They may appear singly or in almost grotesque combinations. That a boy, therefore, lacks enthusiasm for bench work in wood, even when supplemented perhaps by work in decorating leather and in hammering copper, by no means stamps him as one of the non-mechanically minded. He may easily prove a first-class plumber, electrician, or even machinist, not to mention a host of other specialized trades.[2] Consequently the school should make persistent efforts to open up these other industries to its pupils, if only in a crude way, and in spite of obvious lack of equipment and of classroom time.

[1] *The Constructive Interests of Children*, pp. 58–65.

[2] The writer's experience in an evening trade school has furnished frequent illustration of this. Boys were constantly applying to "learn a trade" with not the slightest notion of trade-preference (there was no manual training whatever in their schools) and again with a purely a-priori bias for electricity. These were encouraged to experiment upon themselves in one course after another, and some who had been the despair of the instructor in pattern-making appeared later as the shining lights in electrical construction. Others who had been completely bewildered by the electrical work found themselves thoroughly at home in the foundry room.

No selection of industries for such study can have general application since attention should of course be focused upon the important local industries. The proper group for Pittsburg would be wholly out of place in Grand Rapids. The following list, however, contains the topics which in the writer's opinion would be most frequently appropriate:[3]

Machinery: Its operation, adjustment and repair.

Metal-working: The foundry and machine shop.

Woodworking: The requirements of carpentry, cabinet making, pattern making, and the planing-mill.

Electricity: Bells and simple circuits, telegraph, structure of motor.

Building trades: Carpentry, masonry, plumbing, structural iron work, reinforced concrete construction.

As to time-allowance and mode of treatment, the writer's thesis is that anything at all will be better than nothing at all. At least there may be a brief discussion of such occupations with explanation of the general conditions of work in each, i. e., their desirability in regard to wages, hours, and seasonal fluctuation, —ways of learning the trade, the time required, opportunities for later advancement, etc. The processes of the industry may be illustrated with photographs, magazine illustrations, and trade catalogues. Frequently, however, the teacher will take his class to visit the industry itself. Such visits should involve an actual study of the industry, including discussions beforehand of the things to be noted and explanations afterward of the things seen and of their interrelations.[4] Still further, some of these indus-

[3] Agriculture should appear in this list, of course, but for the fact that the school is accustomed to dealing with it as nature-study rather than as manual training.

[4] The value of such work is supported in an interesting way by the testimony of a number of eminent engineers in the study mentioned above. To quote from four of them:

1. "My actual work was undoubtedly an incentive to apply my decided taste for mechanical work later, but it was rather watching mechanics at their work that led me on. I spent my boyhood time in such ways constantly—whole days in engine rooms of mills, etc.—but I actually made and finished few things of importance, if any."

2. "In my own case I feel that my constant love for seeing machinery at work, and learning by questioning and observation the what and why of things, had most to do with my taking up engineering."

tries may be effectively reproduced in miniature by the pupils within the school shop. This is the ideal conclusion for such a study, giving to the pupils an actual feeling of the materials and actual experience in solving some of the problems involved and of discovering and overcoming one obstacle after another which had escaped their notice when they were simply looking on at the work of others. Such reproduction, by boys of twelve and fourteen years, crowded into the compass of a few lessons, will necessarily be a greatly simplified affair, and the results will be exceedingly crude, but this is not a serious objection, provided that some elementary problems of the trade or industry in question are faced and solved in a fairly typical way, not in a merely imitative fashion. To illustrate: the study of carpentry through making cardboard houses would be purely imitative while the building of a properly braced house frame out of laths would be more nearly typical.[5]

Machine-sense, under modern conditions, seems a fundamental industrial asset. Ability to understand, operate, adjust or repair machinery is doubtless a determining element in the success of the great majority of workers who rise above the level of unskilled labor, and as all machines have so much in common, the study of machinery probably comes the nearest to being a "general mechanical training." In visits to factories the various devices for the transmission of power and motion should receive attention as well as the successive transformations of the product. Then, in the manual-training room, a more intensive study of mechanisms is entirely practicable. The lock on the door, for instance, is always at hand for dissection before the class, and

3. "I was fond of watching the machinists in the factory and spent as much time there as I was allowed, with the result of quickening my power of observation until I had the faculty of carrying in my mind complex mechanisms."

4. "What I consider of eminent importance for the future engineer would be much observation especially if it can be done under a competent teacher. With a bright student this develops into a comprehensiveness that can never be overvalued." Pp. 71–3.

[5] For detailed accounts of such industrial studies see Richards, "The Thought Side of Manual Training," *Manual Training Magazine*, December, 1902; McNary, "A Study of Transportation," *Teachers' College Record*, VIII, 57–66; Wahlstrom, "Industries in the School," *Proceedings E. M. T. A.*, 1906, pp. 89–105.

many other examples, such as toy steam engines, old clocks, sewing-machines and bicycles,[6] may be analysed in the same fashion. The making by the pupils of mechanical projects like waterwheels, windmills, and various moving toys is also of course a most desirable phase of such a study.

Foundry work, electrical construction and plumbing should each have some attention, not only because of the large number employed in these lines but because they make use of such radically different kinds of ability, both mental and manual. Plumbers earn excellent wages, but they seldom surprise with the fine quality of their woodwork, and probably many of them could never be taught to do good woodwork. The molder requires delicacy of touch, while the electrician's main need is not manual dexterity but is a mind that can pick its way rapidly through tortuous circuits and connections. A great variety of electrical tinkering may be done in the shop at small expense, and small wooden molding-flasks made in the shop may be used extensively even at home in the making of castings from lead. In all of the more concrete and experimental studies it should be borne in mind that it is the whole industry which is being studied, and care should be exercised in keeping prominent the relationship between an entire industry and the part which has been selected for reproduction.

The suggestions thus far offered concerning subject-matter have assumed both the conventional time-allowance of one lesson per week, and the conventional organization which treats all elementary pupils exactly alike. That much can be accomplished under these conditions has been proved by a number of schools. The question must arise however whether a course that is not excessive for the less mechanical pupils can be at all adequate for the more mechanical. As Professor Kennelly has shown,[7] almost any course of study may be either vocational or cultural,

[6] The bicycle seems a peculiarly fortunate combination of mechanical-movements, adjustments and resistances to strain. It would be interesting to know how many machinists were first faced toward their careers by the experiences which it furnished them in boyhood.

[7] "The Basis of an Effective Education," *School Review*, May, 1907.

according to the vocational purpose and interest of the pupil. The work outlined above will have a certain vocational value for the mechanically minded pupils while for the others its value will be cultural. But the boy who is destined for industry needs a larger time-allowance, so that while getting the general view of the industries he may also have contact, as adequate as his age will permit, with the different types of work. He needs the actual experimenting with tools and materials,—which should rather be called experimenting with himself and his own abilities.

The idea of an elective course of any sort in the public schools is certain to be unpopular, and it is true that the programme of the regular teacher might be complicated by its introduction. Still it seems to the writer that the situation is one which must be met sooner or later by the formation of special classes. The possibility of holding such special classes outside of regular school hours at once suggests itself. There are obvious objections to such a plan, but the writer has seen it carried out quite effectively. The classes, which met twice a week in the late afternoon, were open to the sixth and seventh grades of one public school. They were taught by the same teacher who had the manual work of these entire grades within school hours, and were attended by 30 per cent. of the boys belonging to these school grades, with a rate of absence very low for any type of voluntary course—3 to 10 per cent.

This experiment under typical public school conditions indicates that such work is a strongly preferred form of play for the more mechanical third or fourth of the school population, and suggests opportunities of which the school should not be slow to take advantage.

Thus far we have been considering the boy under fourteen years of age—the boy under legal obligation to attend school. In turning now to the case of the boy who has passed fourteen, a glance is necessary at further conditions which govern his entrance into gainful occupation. The investigation of the Massachusetts commission furnishes our best data.

The commission concluded that the average boy leaves school at fourteen, not so much from economic necessity as from lack

of interest in the course of study now offered to him; that this feeling is due sometimes to mere impatience of books and craving for a more active life, sometimes to the inability to see how the work of a year or so more in school would be of any real value to him, either personal or vocational; that while in many cases the parents require or demand the boy's wages after fourteen years, more often his going to work is against the protest of parents who would prefer to have him remain there longer.

While the school does make a real effort by moral suasion to retain its pupils, it is possible that comparatively small changes in curriculum and course of study might be far more effective. We are justified in believing that more emphasis upon manual and industrial training would be the most effective single means toward a lengthening of the school life.

It seems to the writer that special courses may be offered by the elementary school for the benefit of this pupil without requiring any serious readjustment of school programme or of the work offered to other pupils. Such a special class could occupy two or more of the afternoon school sessions per week. Its enrollment should probably be limited to boys who have passed fourteen years of age—boys upon whom the school has no further legal hold. It should presumably be placed before the pupil as an inadequate substitute for a secondary course, and none need be admitted except upon evidence of inability to afford or to profit by the conventional high-school course, and upon written permission from parents.

The work in this course might relate to a number of industries or it might be confined to one, according to local conditions. In either case it could of course be much more thorough, systematic and technical than the work given previously and should therefore make a much clearer contribution to industrial intelligence and efficiency. Pupils taking this course would continue for the remainder of the time in the regular school classes, the programme being so arranged that they would drop the whole of certain subjects rather than parts of different subjects. The more important subjects would naturally be confined to the forenoon, and in these no distinction would be made between special

and regular pupils. The dropping of certain subjects would of course mean giving up the high school, but the provisions already suggested would prevent entrance to the special course except by those just on the verge of leaving the school; and for these both the industrial training and the additional drill during the forenoon upon the fundamentals would be just so much clear gain.

In conclusion it may be well to make more explicit the thought that the suggestions which have been set forth do not contemplate new schools nor even new shops. All the plans proposed seem to the writer to belong naturally within the curriculum of the elementary school and to interfere in no way with its present organization. All the work proposed seems to him practicable within the elementary manual-training equipment—somewhat supplemented. Three steps have been suggested to increase the contribution of manual training to industrial efficiency: that the present work should aim primarily at developing intelligence in vocational choice; that special classes should be provided outside of school hours for the specially apt pupils under fourteen years of age; that special introductory trade classes within school hours should be provided for those between fourteen and sixteen who cannot look forward to secondary training. All such opportunities, it may be added, seem especially necessary in our present situation, but there is every reason to believe that they would continue to be of great value even after this country has acquired an adequate system of industrial-continuation schools.

AGRICULTURE IN THE PUBLIC SCHOOLS

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Agriculture is a broad and complex subject. It is both a science and an art. As a science it is a study of the soil, its composition, fertility, care, and uses; the vegetation growing therefrom and the animals subsisting thereon. As an art it is the application of scientific principles and knowledge in actual production from the soil, through the culture and development of vegetable and animal life. In general, then, agriculture may be defined as the theory and practice of producing and utilizing plants and animals useful to man, the soil and its management being the basis of the work.

It is not necessary in this place to deal with the history of the subject or the steps by which it has come to be recognized as one of the most important fields of knowledge. Agriculture, like medicine and the law, is a science; and like them, having a sound foundation, it is being developed rapidly along lines which will make it most useful to mankind.

There may be those who think it not practicable to teach agriculture in the public schools because of its range and complexity. We would call the attention of such to the fact that mathematics also is a broad subject and no one claims that all mathematics should be taught in the public schools; but the subject in its simpler phases is nevertheless a proper one to be presented in these schools. In the same way it is not possible to teach all the science or the art of agriculture in the public schools, but since it touches life in a way even more important than mathematics does, it becomes a proper subject for the public-school curriculum.

From the science of psychology we learn that the mental faculties of an individual are active at all stages of his life, but that certain mental faculties are more active at certain periods

than at others. We may make three general divisions of these periods of activity. The presentative or the perceptive faculties are most active in childhood, the representative faculties most active in youth, and the reasoning power reaches its highest activity during the maturer years.

A course of study in any subject should be so arranged as to harmonize with the natural activity of the mind at different stages; that is to say, the order of the phases presented must be so arranged as to exercise the presentative, the representative, and the reasoning faculties at the proper time and to the proper degree.

In accordance with this principle, the subject of agriculture may be separated into three divisions, which we may term the elementary, the secondary, and the college courses, corresponding almost exactly to the periods of mental activity named above.

ELEMENTARY COURSE

This course covers the period below high school and is concerned almost entirely with the actual doing of things. The subjects to be presented in this course may include a study of the germination of seeds, the selection and care of seed, the actual planting and producing of flowers and vegetables; also, the observation of soils. The child may be led to know the different kinds of soils, and the effects of cultivation, moisture, and air upon the soil. In addition to this, the care and use of tools needed will be a proper subject of study. The observation of birds, insects, animals, and especially the raising of poultry may also properly be included in this elementary course. The foregoing work will constitute an introduction to the study of crops in general, horticulture, and animal industry; and while the work will consist chiefly in having the child actually do these things, work will consist chiefly in having actually do these things, every step taken must rest upon a scientific basis. In all this work the perceptive faculties will be used most.

SECONDARY OR HIGH-SCHOOL COURSE

This course will mainly treat of agriculture as an art, but of necessity will include certain sections of scientific work. High-

school students pursue the subjects of physics, botany, zoölogy, and chemistry, sciences which are all related directly to agri- include laboratory studies and experiments in the fundamental operations of the farm, including work belonging to the subjects of horticulture, botany, soils, crops, and animals. The subjects culture, and in the presentation of each of them, this relation should be made clear. The high-school course may properly of entomology and ornithology as a part of zoölogy closely touch agricultural operations, and these subjects, therefore, may be given some special attention in the high school.

The thought and reasoning powers are more developed in this period, and the high-school course may include a study of the feeding, care, and breeding of animals. The elements of economics as presented in commercial geography, describing the packing, transportation, and marketing of farm products, will lead the high-school student further into the real atmosphere of practical thought and reason.

If we consider the subjects taught in the high school purely from the educational standpoint, supposing that the sole purpose is to train the intellectual faculties and furnish general culture, no one subject is better adapted to this purpose than the subject of agriculture; and we may safely say that any subject which deals with the problems of real human life and at the same time produces acuteness of perception, clearness of memory, and soundness of reason is unquestionably a proper one to be included in the high-school course.

Elementary Agriculture

The following outline of work is specified for the advanced grades, that is, from the fifth to the ninth. No attempt has been made to divide this work according to terms or grades, but a natural order of presentation is given. Graduates from county normal training schools, and others who have had some instruction in agriculture willl be competent to arrange the lessons and present them in an interesting and attractive way. The study of

seeds and the manner of planting them can be illustrated in the schoolroom. The various kinds of soil to be found in the neighborhood may be collected and stored in boxes for examination. Small boxes or pails may be used for the planting work in horiculture and wherever possible it is advisable to have a small garden wherein the common vegetables may be planted in the spring. In the fall a flower garden may be prepared and bulbs secured and planted for flowering in the spring.

Through the lessons in the schoolroom the children may be taught to give special attention to their home garden, to flowers, to the care and uses of animals, and may practice also learning the various trees and shrubs on the way to school. A recitation period of one hour per week may be set apart for this work in agriculture; say the last hour on Friday afternoon or the first hour in the morning of some other day. This time will give sufficient opportunity during the school year for the presentation of all the subjects indicated in the outline.

It is to be understood here, as well as in the course in nature-study, that many valuable lessons may be presented and taught outside of school hours.

The chief purpose of this work is not mere instruction. Agriculture is the art of producing from the soil, and in all elementary work we must appeal principally to the motor activity of the child. The child will here learn to do by doing, and he will also learn to love and respect the subject of agriculture as one of the great vocations of mankind.

In working out this outline the teacher may use any of the textbooks now available on the subject of elementary agriculture. The teacher, not the student, should have these books.

OUTLINE

- Agronomy
  - Crops
    - Structure of farm seeds and grains
    - Seed testing
    - Manner in which young plants appear from seed grain
    - Manner in which young plants appear above ground
    - Kinds, uses
    - Time of planting, period of growth, and means of harvesting
  - Soils
    - Kinds, structure, and composition. Study of moisture, temperature, and air of the soil
    - Common means of making soils productive

- **Horticulture**
  - Germination of seeds
  - Propagation of plants
    - Seeds
    - Layers
    - Runners
    - Budding
    - Grafting
  - Garden vegetables and plants
    - Planting
    - Culture
    - Harvesting
    - Uses
  - Flowers
    - Seeds
    - Bulbs
    - Slips or cuttings
      - Manner and form of planting
      - Proper effects
      - Window gardens
  - Laboratory methods and work
  - Materials needed
    - sharp knives
    - boxes of earth
    - raffia
    - wax
  - Common sprays for fruit trees and plants
- **Forestry** — Common trees and shrubs of the locality
- **Botany**
  - Common weeds—a few from the locality
  - Structure, flowers, seeds, distribution, destruction
- **Entomolo y—a few insects**
  - Recognition
  - Harm done
  - Means of destruction
- **Ornithology—birds**
  - Recognition
  - Song
  - Habits
  - Nests
  - Usefulness
- **Animal husbandry** — Animals, kinds, uses, care
- **Mechanics** — Tools, care and use

HIGH-SCHOOL COURSE IN AGRICULTURE

9th Grade	10th Grade	11th Grade	12th Grade
Botany ½ year	Horticulture ½ year	Livestock and poultry ½ year	Soils ½ year
Agricultural botany ½ year	Crops ½ year	Dairying and farm mechanics ½ year	Farm management ½ year

OUTLINE OF HIGH-SCHOOL COURSE

- **Sciences related to agriculture**
  - Physics
  - Chemistry
  - Botany
  - Zoölogy
    - Entomology
    - Ornithology
    - Physiology
- **Botany**
  - General plant-study
    - Composition
    - Structure
    - Physiology
  - Agricultural plants
- **Horticulture, laboratory practice, and field**
  - Culture and breeding
  - Vegetable gardening
  - Flower gardening
  - Orchard
  - Protection, spraying, etc.
  - Marketing
  - Landscape
    - Drawings
    - Sketches
- **Agronomy**
  - Soils
    - Elements
    - Kinds
    - Fertility
    - Management
    - Ventilation
    - Moisture
    - Temperature
  - Crops
    - Seeds
      - Selection
      - Care, treating for diseases
      - Testing
    - Planting
    - Culture
      - Soil needs
      - Climatic needs
      - Improvement
    - Rotation
    - Adaptation
    - Marketing

- **Animal husbandry or live stock**
  - Breeds
    - Cattle
    - Horses
    - Sheep
    - Swine
  - Uses
  - Care
  - Feeding
  - Judging
  - Marketing
- **Poultry**
  - Breeds and breeding
  - Incubators
  - Care and feed
  - Marketing
- **Dairying**
  - Care of milk
  - Tests, Babcock, etc.
  - Testing individual cows
  - Separators
  - Butter making
  - Cheese
- **Farm mechanics**
  - Tools
    - Kind
    - Care
    - Purchase
  - Repairs
    - Tools
    - Harness
    - Fences
    - Buildings
  - Architecture
    - House
    - Barns
    - Out-buildings and silos
  - Study and comparison of team draft, use of dynamometer
- **Farm management**
  - Arrangement of field, pastures, rotation
  - Cost of crop production
  - Most profitab e crops
  - Most profitable stock
  - Housing of machinery
  - Study of farm buildings in vicinity
  - Drainage, tile, ditches, etc.
  - Sanitation
  - Accounts
  - Crop values, by current prices
  - Average yields in this state compared with the best known
  - Uses of soil

THE VALUE AND LIMITATIONS OF FROEBEL'S GIFTS AS EDUCATIVE MATERIALS PARTS III, IV, V

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PART III

THE DEGREE OF SUCCESS ATTAINED BY FROEBEL IN ATTEMPTING TO APPLY HIS EDUCATIONAL PRINCIPLES TO THE USE OF MATERIALS IN THE KINDERGARTEN

Froebel's attempt to apply his philosophy gives evidence of both his greatness and his limitations, his strength and weakness as an educator.

In common with all great inventors, his applications often violate his principles. His greatness lies in his effort to put all his theories and application to the severest test.

He not only tested them himself in work and play with children, but urged his co-workers to bring him the criticism resulting from experience in using them.

In spite of this earnest attempt to test the value of his theories in experience, disappointment awaits any student who imagines that even a genius can entirely reconstruct earlier habits of educational practice by the leavening influence of the most regenerating and revolutionary theory. Froebel's embodiments of his philosophical theories as a guide for the practical procedure of the home and the kindergarten are to be found mainly in three volumes: *The Mother-Play, The Pedagogics of the Kindergarten,* and *Education by Development.*

The *Mother-Play* is a practical exposition of Froebel's theory of the educative process as one of interaction or interplay between the insight, wisdom, and experience of the mother and the native instincts, the blind impulses, and the inexperience of the child, which, through the medium of plays and games, are to be illuminated with the significance and meaning of social life.

A study of these three volumes would seem to indicate that Froebel had more successfully applied this theory of interaction in his plays and games than in his methods for the use of the gifts and occupations in the other two volumes. The following criticisms of the practical procedure of the kindergarten as laid down in *The Pedagogics of the Kindergarten* and *Education by Development* might be offered.

a) Though the Froebelian theory of knowledge was that it should grow out of the needs of the child's life, and come to consciousness through the child's own activities, in these volumes we find him frequently falling back into the practice of giving instruction and information unrelated to the needs of child life and in no way leading to an increasing appreciation or control of the child's own experience. "Knowledge," he says, "is for the purpose of use in life," and yet he plans plays with his gifts in which geometric knowledge and philosophical abstractions were sung to the child through an educative process in which the self-activity of the mother or teacher, much more than that of the child, is developed. Being deeply interested in the philosophic and geometric problems of space, we find such extraneous information as the following imposed upon the child:

> The sphere takes up the space you see,
> So where it is the cube cannot be.[14]

Again in a play with the cube:

> Though one side was all you saw,
> Yet my hand shut up five more.[15]

Or as in another play

> I twist and turn, go high and low,
> Three sides at once is all I show.

Here we have quite the method of "object-teaching," a method Froebel was earnestly attempting to supersede with activity as a substitute for sense impression.

b) Froebel's intuitive insight into the educational value of the symbol inspired an enthusiasm which frequently led him to

[14] *Pedagogics of the Kindergarten*, p. 79.

[15] *Ibid.*, p. 84.

read artificial symbolic meanings into simple natural facts; and betrayed him into puerile applications of an inspiring, but ill-understood educational value.

c) Froebel's attempt to relate and unify all the experiences of the child lead to his idea of unified playthings— the gifts. It was believed that the external unity embodied in the gifts, based upon geometric evolution, would lead to inner unity, especially if these unified materials were used in a related method ("sequence plays"). Some of the methods suggested by Froebel would seem to be based upon the desire to bring to the child's consciousness the geometric unity embodied in the gifts. Thus the geometric analysis of the material leads not only into intricate and complex divisions, but to play materials so small and limiting as to call forth the criticism of the psychologist and the hygienist.

The criticism has been made that the gifts are more logical than psychological—the unity being embodied in the materials, rather than in furnishing that more living unity—the unity between the impulses of the child and complementary materials. Thus the method of using these materials has often degenerated into artificial and unnatural methods of dictating to the child certain definite ways of handling and using them which would lead to the consciousness of the geometric relations and unity of which they are an embodiment. In other words instead of these materials being used as a means of organizing the child's present experiences, illuminating them so as to bring to the child's consciousness the unity of life, they were used to increase his consciousness of the unity in the material.

With all the fair criticisms that may be passed upon the gifts, the attempt to select materials in the light of a high standard of merit was most unique and worthy, and, after all, is still the most notable effort in this line.

Some of the gifts are much more successful than others, and, provided they may be used on the basis of selection and elimination, rather than as a related whole whose value is lost if the "charmed circle" of unity be broken, they are and ever will be materials of great worth in the education of the little child.

PART IV

SOME PRESENT-DAY CONCEPTIONS OF THE AIM OF MATERIALS IN THE KINDERGARTEN

It is interesting to compare the conception of some of the contemporary leaders of education with the Froebelian ideal of the educative process as the reciprocal relation, the "give-and-take" between the maturity of the teacher and the immaturity of the child. The constitutive elements in this interchange were (1) the impulse, the activity, the need manifested by the child; and (2) the standard, the interpretation, the insight contributed by the teacher, the adult, in the modification and reconstruction of the child's experience.

The Baroness von Bülow gives the spirit of this in her *Reminiscences of Froebel:*

> Therefore it is of the greatest importance that the understanding of the grown-up should come to the help of the dark striving of the young child, in order to point out to the blind impulses that are endeavoring to express themselves the right way of reaching their aim.[17]

Dr. John Dewey gives as his conception of the educative process,

> The fundamental factors in the educative process are an immature, undeveloped being; and certain social aims and meanings incarnate in the matured experience of the adult. The educative process is the due interaction of these forces. Such a conception of each in relation to the other as facilitates completest and freest interaction is the essence of educational theory.[18]

The early manifestations of self-activity are in the form of native instincts and impulses. To the child these are mere tendencies and impulses to act with no future beyond their own pleasurable results; to the teacher they are indications of awakening powers and interests which with a guidance in accord with their significance and possibilities may lead to all the values in the accepted curriculum and the standards of worth in an intelligent society and civilization.

While the impulses of the child are the only points of de-

[17] P. 105.

[18] *The Child and the Curriculum*, pp. 7, 8.

parture in a self-active process of education, they must be accepted only upon a basis of selection and elimination in the light of the judgment passed upon them in the experience of an enlightened civilization. When isolated from the part their higher development has played in the creation and preservation of the signal achievements of civilization, impulses stand on a level of merit with no principle of selection; but when they are tested in the accomplishment of the elevation or degradation of society, education is in a position to elect only those which are worthy of a position of dignity in the activities of the school.

Dr. Cole thus expresses the relation of impulses and instincts to the curriculum:

> Freedom in education seems to be that instincts and impulses are to be utilized, not eliminated. For these are the obvious contributions of the self to the educative process. If they be not respected, or in some way maintained, it is difficult to see how there should be talk of freedom. Yet it is one thing to respect instincts and impulses, and another to admire them as they blindly perform an unassisted work. . . . . Then instincts and impulses may be thought of, not as the opposites to ends, ideals, or values so much as the possibilities and cravings for these very realizations and satisfactions. The educational situation ought then to be, not impulses versus the curriculum, but impulses for it.[19]

Miss Blow states the Froebelian conception of the relation of the impulsive manifestations of the child in play to the achievements of civilization:

> Through his study of the different forms of childish play Froebel became aware of the fact that some of them point toward the practical arts, some toward the fine arts, some toward science and literature and some toward the ethical life of man as incarnated in social institutions. In these creations of the human spirit Froebel found his standards of value. In different native forms of play he recognized the germinal tendencies of which these values are the higher expression.[20]

In the light of this discussion of the relation of impulses to their mature forms of expression, one might submit the following line of thought:

a) The most far-reaching instincts, those with the most varied implications in their later emergence in the curriculum

[19] Percival Cole, *Froebel and Herbart*, p. 33.

[20] *Educational Issues in the Kindergarten*, p. 143.

and in social life, seem to be: (1) The impulse to communicate—conversation;[21] (2) The impulse to find out—inquiry; (3) The impulse to make—construction; (4) The impulse to artistic expression—arts.

b) The two essential points to be emphasized here are: First, impulses are self-contributions to the educative process, and should culminate in the spiritual investments of civilization—art, science, industry, institutions, and religion; second, as preserved by civilization these achievements represent the same impulses that are germinal in the child, emerging on higher planes of creativity sifted of the trivial and the transient, and thus representing the eternal values of human progress on its highest level.

c) While these achievements are the educational inheritance of the child, civilization's bequest of its noblest and best, they can be appropriated by him only through a self-active process of reproduction, through the creative development of the same germinal powers, emerging on higher levels in the curriculum and social progress. In other words, the child must re-create before he can appreciate, must reinvent before he can appropriate and win his inheritance through his own self-active powers.

d) To reachieve, to re-create and reinvent on the lower levels of development demands material as a stimulus and necessary condition to this creative process.

e) The differentiations of the creative impulse as manifested in art, science, industry, etc., together with the different phases of this impulse from which they spring, require as their counterpart a differentiation of materials for two reasons: (1) the ends to be attained—art, science, industry, etc., require for their realization certain specific materials so that each may find its own legitimate medium of expression. (2) The early manifestations of these impulses which culminate in the varied arts and industries require differentiation of materials as nourishment and as the condition of their activity.

f) This differentiation of materials, to meet the requirements of the ends to be attained and to supply the nourishment and

[21] Dewey, *School and Society*, p. 57.

activity of the germinating impulses, would result in a unified but not closely organized system of selected materials. Here the unity would be, not only a unity in and among the organized materials (in that no one could supply the need for the other), but would meet the psychological requirement of unity between the impulses of the child and materials.

In an all-round education all these worthy instincts are to be fed and started on the upward way to their goal. If any one is omitted or unduly sacrificed to another we rob (1) the child of its individual development and inheritance; (2) society of its right to receive from its members the contributions necessary to its fullest maintenance.

PART V

SOME PRESENT-DAY CONCEPTIONS OF THE APPLICATION OF FROEBELIAN PRINCIPLES TO THE USE OF MATERIALS IN THE KINDERGARTEN

If the Froebelian conception of the educative process as one of developing interaction between the child and the teacher in a social environment be accepted, this demands four essential factors: (1) the self-active child; (2) child society; (3) the enlightened and sympathetic guide or teacher; (4) educative materials as selected stimuli to the interaction process between child, children and teacher.

That we may realize the organic unity in which these elements cohere, let us imagine certain abnormal conditions where some are withheld. First, imagine a normal, self-active child without suitable materials as an outlet for his creative impulse; second, add to this situation the educative materials without child-society or mature guidance; third, imagine the self-active child provided with educative materials, under mature guidance and withhold child-society—the ideal social situation in which all of these function; fourth, and finally, place the self-active child in child-society where selected educative materials are provided as stimuli to social interaction under the guidance of an enlightened, sympathetic, mature guide, and you have Froebel's ideal process of education.

With these factors in an organically related whole let us consider the function of each to the other and the whole—especially the relation of children to child, and of teacher to children and child. What does the presence of social equals, with like impulses, powers, privileges and rights imply to the child? What is the function of the teacher in adjusting these to each other in the educational situation?

These might be answered by asking a counter question—What are the different ways in which society demands social co-operation in preserving the rights of all its members to lead and to follow, to be led and to be followed? Society would seem to demand social co-operation in these four typical ways: (1) ability to co-operate with one's equals in working out purposes suggested, offered or planned by a superior; (2) Ability to secure the co-operation of others in working out one's own purposes; (3) Ability to co-operate with others in working out a purpose suggested by one's equals; (4) Ability to co-operate with others in working out a plan made up of purposes suggested by the different members of the social group, with or without the guidance of a superior.

There is much discussion in education at present as to the possibility of maintaining individual freedom and development under conditions where the ego is working out purposes which are not self-originated. This would be more easily answered if man were not social as well as individual in his nature, and if man did not often realize self through adopted purposes in social co-operation. Also the significance of suggestion and imitation in the development of individuality would have to be reckoned with.

The origin and development of purpose in child-life, and its relations to social suggestion, social co-operation and the demands of democratic society are too subtle and too vast to attempt to discuss. However one might venture to state that in child-life purpose gradually emerges out of: (*a*) originally aimless activity, (*b*) accidental activities, representations and arrangements, (*c*) imitation and suggestion from (1) equals and (2) superiors.

In the light of the problems of democracy the following practical methods might be submitted as an economic means of preserving for each individual in child-society the right to lead, to follow and to co-operate with one's equals under the guidance of a superior.

1. Each child may be provided with materials for experimentation with no purpose suggested by the teacher or the other children. Here each child works as an individual with no direct attempt to develop the sense of group.

2. The teacher looks over what each child has done to grasp the first opportunity to suggest purpose, or possibilities of purpose in some accidental representation, arrangement, or activity which has been stumbled upon by the child.

3. The teacher suggests a purposeful repetition of an activity originally aimless.

4. Teacher suggests that the children each should look at the other's representations or arrangements to discover possible purpose each in the other's work.

5. The teacher suggests a standard of "better" and "best" and with that in mind has the children select which of the varied contributions is the best to adopt as a social purpose for the whole.

6. The teacher suggests a child-like purpose to the whole group—(*a*) All making the same representation in the same form; or, (*b*) All making the same representation in a variety of forms; or, (*c*) All making different things to contribute to a common end or plan demanding individuality and social co-operation through a variety of social contributions.

These are purely suggestive and are only a few of many means the thoughtful teacher might use in her effort to develop individual initiative, self-determination, and leadership while seeking to increase and deepen the child's sense of kind, group, consciousness, and co-operation on a gradually ascending scale.

Democratic society demands this sane balance between the right of the individual and the social good, under the conditions of freedom and development. Here we have interaction between the individual and society as the social situation and requirement.

Hence with this goal in mind the school should gradually develop the little individualistic ego, with latent social tendencies into its social privilege of working *under, over,* or *with* its equals under conditions of freedom and development.

Mazzini tells us that "democracy is the progress of all, through all, under the leadership of the best and wisest."

MAKING FLOUR

JENNIE HALL

MY MOTHER'S STORIES

MILLS

Our flour is made in big mills.
Steam turns all the wheels.
Our grandfathers had water-mills.
Water made their wheels turn.
Some people have windmills to grind flour.
In Greece windmills have white sails.
They look like ships on land.
Long ago people made horses turn their mills.
Some people have little handmills.
They turn them with their hands.
Some people use mortars.
They make their own mortars.
They get a big stone.
They make a hole in it with a stone ax.
It is hard work.
At last the hole is big enough.
But it is not smooth.
The people make it smooth by rubbing it with another stone.
It takes many weeks to make a stone mortar.
Many people make mortars of wood.

That is not such slow work.
My grandfather told me how to make one.
He made one for skinning hominy.

THE MILL WHEEL

It is pleasant to go to the old mill race.
I sit on the green bank.
The water rushes past me.
It drops upon a mossy old wheel.
Slowly the big wheel turns.
It drips with water.
Below the water runs out.
I look down there.
It splashes and whirls and foams.
At the side of the wheel stands the mill.
It is made of brown logs.
Around the windows the logs are white with flour.
The miller looks out of the window and smiles at me.

AN OLD FLOUR MILL

I like an old flour mill.
I like to look through the window at the water wheel.
It turns slowly all the time.
The water falls over it.
It splashes, splashes!
Inside the mill everything is white with flour.
The floor is white, the walls are white.
The miller's hair is white.

So are his clothes.
The big millstones rumble.
There is a long chute above the millstones.
The miller opens a little door in this chute.
I see the wheat falling upon the millstones.
There is a big box around the millstones.
The miller opens a little door in this box.
I see the white flour falling from the millstones.
I hear a man call, "Miller!"
The miller goes to the door of the mill.
There is a man with bags of wheat in a wagon.
"I have a grist to grind," he says.
"Put it into the corner," the miller says.
"I am busy to-day."
"How many bags?"
"Ten," the man says.
"I get two for toll," says the miller.
"Put mine into the bin."

PLAYING MILLER

I saw some children playing miller.
They had a coffee mill and a wire sieve and some dishes and some ears of corn.
Helen shelled the corn.
Then Ruth put it into the coffee-mill and ground it.
"I am the steam engine that turns the mill," she said.
At last she had ground all the corn.
She opened the drawer.
It was full of yellow meal.

"But some of it is too coarse," said Helen.
She put it into the sieve and sifted it.
Fine yellow meal fell into the dish.
This milling was fine.
The children worked at it for three or four days.
Then they had six quarts of good cornmeal.
"Let's have a bon-fire," somebody said.
"And we will cook like Indians," another one said.

HOW TO MAKE HOMINY

We put some water into a dish.
We put some lye into the water.
We weighed a cup of corn.
It weighed 8½ ounces.
We put the corn into the lye water.
We let it stand for two nights and two days.
Then we skinned the corn by rubbing it with our hands.
We washed it many times in clear water.
Then we cooked it in a double boiler.
Some children had three cups of hominy.
It weighed 19 ounces.
But each child used only one cup of corn.
That cup of corn weighed 8½ ounces.
How could it make so much hominy?

HOMINY

My grandmother used to make hominy.
A big iron kettle was always on the stove.
It was full of hominy.

My grandmother made her own lye for the hominy.
She burned wood in her stove.
She took out the ashes.
In the yard was an ash hopper.
An ash hopper is a big box with a hole in the bottom.
My grandmother put the ashes into this hopper.
Then she put water into it.
The water slowly went through the ashes.
It dropped out at the bottom into a pan.
When it dropped out it was lye.
My grandmother used this lye to make hominy.

HOW WE MADE A MORTAR

We took a big piece of wood.
It was two feet long and one foot wide, and eight inches thick.
We took some hot coals from the furnace.
We put them on the wood where we wanted the hole.
We left them for an hour.
Then we took them off.
They had burned the wood under them.
It was black and soft.
We cut it out with chisels.
We had a little hole.
Then we put more coals into the hole.
We left them for an hour.
Then we took them off and cut out the burned wood.

So we did many times.
At last the hole was big enough.
But it was black and was not smooth.
We sandpapered it.
We used our mortar for skinning hominy.

FLOUR

There are many kinds of flour.
Germans like rye flour.
The Japanese taught us to make rice flour.
We make flour from buckwheat.
The Indians taught us to make cornmeal.
They grind it in stone mortars.
Indians make flour from acorns.
They dry the acorns.
Then they grind them in stone mortars.
Scotch people grind oats into oatmeal.
Then they make gruel with the oatmeal.
They also make oat-cakes.
They put them upon a piece of iron.
They put the iron before the fireplace.
The cakes bake there.
Scotch people also make flour from barley.
They make barley cakes as they do oat-cakes.
They also make flour from peas.
But most flour is made from wheat.

ACORN FLOUR

The Indians dry acorns.
They take off the shells.

They pound the acorns in a stone mortar.
That makes acorn flour.
But the flour is bitter.
The Indians must get that bitter taste out.
They get some clean sand.
They pile it up on the ground.
They make a hole in the top of the sand.
They put fir leaves into the hole.
They put the flour into a basket.
They put warm water with it.
They stir it.
It is thin dough.
They put the dough into the hole.
The fir leaves keep it from the sand.
The water runs out of the dough.
The bitter taste goes with it.
The Indians put more hot water on the dough.
They do that until the bitter taste is all gone.
The flour is done.

HOW THE INDIANS COOK ACORN FLOUR

One Way

They put warm water with the flour.
They make it into a thin dough.
They put it into a basket.
They heat small stones in the fire.
They put the hot stones into the dough.
The hot stones cook it.
It is acorn mush.

ANOTHER WAY

They heat a big flat stone.
They pour the thin dough upon this hot stone.
The hot stone cooks it.
It is a thin acorn cake.

HOW THE INDIANS HEAT WATER

They have no iron pots.
They have only baskets.
They cannot hang baskets over the fire.
The baskets would burn.
They put the water into a basket.
They heat small stones in the fire.
They put the hot stones into the water.
The stones make the water hot.

AN OUT-DOOR OVEN

It was built against the end of the house.
It was a little shed built of stone.
On one side was a little round door.
The woman was ready to bake.
She filled the oven with sticks and set them on fire.
The fire leaped up in the oven.
The smoke came out at the door.
The stones grew hot.
When they were very hot, the woman raked out the fire and ashes.
She cleaned the oven floor with a cloth.
She brought her bread out from the house.

There were many loaves in a long wooden box.
She took a wooden spade with a long handle.
She put a loaf on the spade.
She put the spade into the oven and pushed the loaf off upon the floor.
So she put in all her loaves.
They lay close together on the hot floor.
The woman put a piece of iron over the door.
She piled hot ashes before it.
The hot stones of the oven cooked her bread.
In almost an hour her bread was done.
It had a nice brown crust all over it.
Sometimes every house has an oven.
But sometimes a whole village has only one oven.
Then it is very large.
Many women bake bread in it at one time.

"ALICE'S SUPPER"

Far down in the valley the wheat grows deep,
And the reapers are making the cradles sweep:
And this is the song that I hear them sing,
While cheery and loud their voices ring,
"'Tis the finest wheat that ever did grow,
And it is for Alice's supper; ho! ho!"

Far down on the river the old mill stands,
And the miller is rubbing his dusty hands;
And these are the words of the miller's lay,
As he watches the millstones grinding away,
"'Tis the finest flour that money can buy,
And it is for Alice's supper; hi! hi!"

Down stairs in the kitchen the fire doth glow,
And cook is kneading the soft white dough.
And this is the song she is singing today,
As merry and busy she's working away;
"'Tis the whitest dough whether near or far,
And it is for Alice's supper; ha! ha!"

To the nursery now comes mother at last,
And what in her hand is she bringing so fast?
'Tis a plateful of something, all yellow and white,
And she sings as she comes, with her smile so bright;
"'Tis the best bread and butter I ever did see,
And it is for Alice's supper; he! he!"

EDITORIAL NOTES

The Articles of Mr. Bain and Mr. Kent on Industrial Training

Two articles in this number of the *Elementary School Teacher* discuss the orientation of the Elementary School, with reference to industrial training. Mr. Kent attacks the problem in its simplest form and suggests practical changes and additions which would involve hardly any increase in school expenses. What he presents is a change in point of view in giving the manual-training course in the elementary school, its extension by classes out of school hours with voluntary attendance, and a special course for boys a year or two after the elementary-school period. Mr. Kent lays especial stress upon the possibility of using this work to discover and emphasize different forms of "mechanical abilities," which should be the basis of trade choice. Mr. Bain attacks the problem with a view to an alternative curriculum for the two last years in the elementary school following in the steps of the English elementary technical schools; that should prepare the child, boy or girl, to approach industrial occupations after having gained a general grounding in their common methods and the opportunity for more intelligent vocational choice.

The Problem of Industrial Training in the Elementary School Presented

Both writers recognize that work at this period cannot be specialized trade-school work. Both appreciate that this type of training must react back into the elementary-school curriculum, that this foundation for industrial training has its cultural value as well as its specialized industrial import. Thus the problem of industrial training in our elementary schools appears definitely in these articles. It must be general, selective, and in the best sense instructive. It should gather about the motor processes, but the work suggested is as really educational as any that the elementary school offers.

General consent among educators and employers of skilled

labor, and skilled workmen, calls for an unspecialized industrial training up to the fifteenth or sixteenth year. If this position is frankly accepted, many who have feared the trade school will be relieved. At least in the elementary school, the training will remain educative in an unspecialized sense. Here the interpretation through the history and literature of mechanical activities will remain. The undeveloped character of the child saves him from too early specialization. Another count is added to the advantages Professor Fisk has detailed of a prolonged period of infancy.

The Child in the Elementary School Protected from Specialization

This type of education can and should be distinctly liberal in its character. On the one side its history and geography and on the other its presentation of civic and industrial conditions relate the trade occupations both to their social origins and their immediate social conditions. The economic conditions, so far as children of that age comprehend these, can be touched upon in connection with the raw materials and the market. Out of this will arise an interest in the whole product which may lay the foundation for that intelligence which can in some measure resist the narrowing influence of the specialized labor in the factory.

The Character of Such an Industrial Course in the Elementary School

There are, to be sure, those who see little if any purpose in such attempts at increasing the general occupational intelligence of the factory laborer. Except for the opportunities which will develop the unusual boy who is to be the high-grade mechanic or foreman, the only ideal they will recognize is that of speed in operating the individual machine with the necessary bondage of the factory worker to the machine itself. Beyond the reply that the right to think and to comprehend can never be deliberately denied to anyone by our community, there is a very pertinent consideration which needs emphasis—that our tools (and these include our machines of the most complicated sort) are invented and constructed as much with reference to those who are to use them as to the product which they are to turn out. The increased intelligence of the workmen is as sure to affect the type of machine as is the demand for specific goods. The mod-

The Legitimacy of Increasing the Intelligence of the Factory Laborer

ern factory looks as definitely toward the immense supply of cheap, unintelligent labor, as it does toward the vast market for inexpensive articles which our methods of transportation make possible. Many a recent labor-saving device has arisen in answer to so temporary a labor condition as a strike; and whole factories have been built and equipped to make use of the cheaper labor of women and children. If the history of invention in industry proves anything it is that increased intelligence in the laborer will inevitably reflect itself in the form and function of the tool he uses.

NOTES AND NEWS

Dr. James P. Haney, director of art and manual training in the public schools of New York, with Professor Arthur W. Dow, represented the United States on the programme of the Third International Congress for the Development of Art, in London last summer. Dr. Haney, who is secretary of the National Society for the Promotion of Industrial Education, made a plea for the broader use of drawing in education and urged its immediate relation to many school subjects and its great importance in all phases of training for a vocational life.

The older teaching emphasized the technical side, and spent much time in copy-work. The subject was made dry, formal and imitative. Later teaching in America has seen much more free and creative work. The drawing is not now taught as a mere end in itself, quite apart from other school subjects, but has been made a means to many ends and has been successfully introduced from the kindergarten to the high school. Our present teaching sees drawing made of use in all forms of constructive work. The boy in school now learns the use of plans, and how to make and read them. This knowledge is an invaluable asset to one who later enters the vocational field, as so many boys must. Many hundreds of pupils are yearly taught in our elementary schools how to make, directly from the model, a working-sketch properly lettered and dimensioned. Thus the work has been taken out of the formal and theoretical field and made immediately practical.

Beside this both our boys and girls are constantly called upon to use drawing in connection with their work in design. The latter subject not only gives excellent training in taste, but is daily becoming of more importance in our industries. We have learned that good form and pattern must appear in all our manufactured products which are to compete with the well-designed goods made in foreign markets. Teaching of design in the public schools not only educates prospective workmen and designers, but also is fast developing an appreciative public which understands the practical side of art and each year demands higher standards in all forms of dress and furniture.

One of the most important problems for educational theory and practice is that of the "spread of training," or "transfer of training." Does training in one subject or process help in another? The most recent contribution to this subject which has come to our notice is by Dr. G. C. Fracker, of the University of Iowa, "Studies in Psychology—No. V," issued as a monograph supplement of the *Psychological Review*. Dr. Fracker made experiments to determine whether memory for various tests, e. g., poetry, order of nine grays, order of tones, order of nine numbers, etc., could be improved by training. In the case of some, e. g., the order of tones, the training was very similar to the test; in others it was dissimilar.

The results of the experiments tend to show an improvement where the training was closely similar to the tests, but not much, if any, in cases where it was not similar. Training in remembering the order of tones and colors did not apparently prove of any value in the ability to remember poetry.

The most novel and suggestive result was the importance of "imagery." Improvement seems to depend upon the consistent use of some form of imagery. "Improvement depends also upon the fitness or adequacy of the imagery to do the thing for which it was adopted." Perhaps this opens up a great field for the teacher of the multiplication table, and other of the similar tasks: to find imagery that shall help the children. But who can devise any imagery that shall be adequate for English spelling?

The state of Washington reports will show an expenditure of $51.32 a pupil, the highest, it is expected, of all the states in the Union. Spokane is also proud that the last government report showed it as first in its investment per capita in school buildings and grounds, and second only to Pueblo in the per capita cost of maintaining schools. Newton, Mass., is third in this latter regard.

The interest excited by the exhibition of representative industrial educational institutions of the United States, under the direction of Charles H. Morse, at the Chicago meeting of the National Society for the Promotion of Industrial Education is further accentuated by the second annual report of the Massachusetts Commission on Industrial Education, recently published. Mr. Morse, as secretary of the commission, states that the narrative and illustrative material collected for use in connection with this exhibition is of such value that it will be published as a bulletin of the commission.

Evening schools for industrial workers have been established by the commission at Cambridge, Beverley, New Bedford, Waltham, and Taunton. Upward of a thousand children, young men, and young women in the state of Massachusetts are now attending industrial schools which are under the direction of the commission.

Professor H. Heath Bawden is about to publish a volume entitled: *The Principles of Education.* This book is the result of the author's study and teaching of Professor Dewey's educational philosophy for the past eight years. Part I treats of the "Problem of Education." Part II treats of the "Subject-Matter of Education" on the psychological basis of child-development. This part of the volume contains a statement of those important psychological and sociological grounds for a radical reconstruction of the elementary curriculum for which Professor Dewey's educational philosophy stands. Part III discusses the "Method of Education" on the logical basis of adult experience. The various phases of "special method" are treated

as corollaries of the great fundamental social and psychical laws recently brought to light in biology and psychology.

B. F. Scales has a plea in the *New England Journal of Education* for "out-of-school" musical organizations for school children, under the direction of qualified instructors. He feels that it removes the strain of the regular routine, while giving aesthetic training. In the William Penn Charter school, the number of applicants for such clubs has tripled in eight years, and visiting artists have noticed a decided increase in the appreciation of good music.

Boston is to spend $58,000 during the next twelve months in improving and increasing its playgrounds. Athletic fields for the high schools, and instructors for those fields are included in the appropriation. The rest of the money will go for improving school playgrounds, and providing local playgrounds for the older grades. Military drill in the high schools will be continued as at present.

Neurasthenia is the most common disease given by New York teachers to the board of retirement as the cause of their withdrawal from active service. In the three years since this board was organized 351 have applied for pensions on the plea of length of service; 124 gave neurasthenia as the reason for no longer continuing at work; 31, the next largest number, gave heart-disease. Nearly all of the applicants had been in service over thirty years.

Postal cards as a means of education is the latest fad, fresh from Germany. The school museum at Breslau has undertaken to make a collection of all postal cards which might be useful in imparting knowledge. Manufacturers are asked to forward samples. Many cards have already been printed in Germany which illustrated natural and political history, and some which aim to give instruction in the German language.

"Compulsory education laws have not yet been adopted in any of the southern states, except Kentucky and Missouri," says G. F. Milton in *Child Labor and Social Progress.* Great progress has been made in education during the past twenty years, yet in 1900 27.9 per cent. of all the illiterate white voters of the Union were found in southern states containing only 14.9 per cent. of all the white voters. The South is the only section of the United States in which attendance on public schools between the ages of six and fourteen is not compulsory. Many of the much-criticized cotton-mills supplement the public-school deficiencies by running schools of their own in connection with other kinds of "welfare-work." "But in nearly every 'mill-school,' says Alfred Seddon, writing in the same publication, "the teachers speak most discouragingly of their work. The children attend until there is a demand for mill-labor; then they leave. Out of 110 on the roll, only 34 may be present at classes. Mill schools can never be a substitute for compulsory education by the state."

BOOK REVIEWS

The Condition and Tendencies of Technical Education in Germany. By ARTHUR HENRY CHAMBERLAIN. Syracuse, N. Y.: C. W. Bardeen, 1908. Pp. 108.

Technical Education is a brief but very complete classification and account of the industrial and technical continuation schools of Germany.

The chief function of the schools is viewed as vocational training. The commercial demand for such training is naïvely accepted as the sufficient reason for their being and the psychology of manual work in the schools is not considered.

While we may not agree with Mr. Chamberlain in the very few deductions which he makes, and though the book is very poorly printed, it is an exceedingly valuable report of existing conditions in the home of vocational schools.

WM. C. PAYNE

HARRISON PRACTICE SCHOOL
CHICAGO, ILL.

Father and Baby Plays. By MILLIE POULSSON. Illustrations by FLORENCE STORER. Music by THERESA GARRISON AND CHARLES COMICH. New York: Century Co., 1907.

The modern awakening of parenthood and the strong interest in the child-study movement has been steadily gaining ground under the influence of the mothers' congress, the parents' and mothers' clubs of schools and the general trend of modern pedagogical literature. No one has done more to further this, in a simple, sympathetic way, than Miss Millie Poulsson with her insight into the child's needs and her power of putting these so that the "grown-up" must feel their importance.

In this book of *Father and Baby Plays* Miss Poulsson has given us a charming collection of verses and games which would tempt any father to stray into the world of baby play. They are so natural that they are almost a spontaneous expression of the things that the right kind of father would do without teaching —but being arranged in an interesting and related order, they suggest a purpose and meaning that would not be seen otherwise. The music is simple and attractive, and not the least interesting parts of the book are the well-chosen selections and suggestions which precede each group of plays. Among the best of these little songs are, "Funny Fishes," "Chasing Speck-o' Dirt," "Two White Ducks," "The Rabbit," "The Squirrel," "The Trotting Plays" and "The Shadow Plays," while of the lullabys "Gapo," "Nid, Nod," and "Slumberee" are such as all mothers will want to use.

It is true that the relation between the Father and the Baby might easily be less beautiful if it became self-conscious, no matter how thoughtful or educational it was. As Professor Royce says there are limitations to the too thoughtful

attitude of mind. Only the most highly developed intelligence will carry us as freely as wholesome instinct. But used as suggestively as Miss Poulsson has intended, this book will prove to be a delightful inspiration to many fathers, will educate many others in ways that they would be chary of entering on undirected, and will give many little children happy hours of fun and frolic.

Merry Animal Tales. By MADGE BIGHAM. Boston: Little, Brown & Co., 1908.

Stories to Tell to Children. By SARA CONE BRYANT. New York: Houghton, Mifflin & Co., 1908.

These are two books of stories for children, collected and edited by Miss Bigham and Miss Bryant; and both the compilers have included advice and suggestions for the teacher, though in Miss Bigham's book it consists only of a few pages of explanatory notes.

The *Merry Animal Tales* have a good deal of spontaneity and the action and interest do not drag, but there is a doubtful wisdom in taking away an old friend's individuality of appearance, however attractive the new dress may be, and these tales are our old friends, the well-worn fables—thirty-seven of them, adapted from La Fontaine and put into prose in the form of a series of stories in which continuity is preserved by introducing the several incidents into the lives of a family of rats.

The fables are enlarged, the terse, pithy sentences which find their way into the memory become long conversations, and the whole has a somewhat artificial setting. The teacher is advised to use seat work of a rather mechanical kind to illustrate these stories in a way in which their value as literature would be still more lost. It is true that these suggestions might give a new impulse to the teacher in the rural districts that are mentioned, but possibly this impulse might be aroused in a more valuable way.

The stories to tell to children collected by Miss Bryant will be found useful by many teachers and her suggestions about telling stories are even better than the stories themselves. Miss Bryant's point of view is very sound and her criticisms are direct and helpful. The stories are collected from many sources and are often new and interesting The story of Epaminondas has already become popular, and several of the others bid fair to follow suit. The serious criticism to be passed on both these books is that the style is not finished and the construction is often weak. The English in many instances is crude and unsatisfactory, "I guess," "Hurry up," "Right here," and so forth, being common expressions, and there is a certain affectation of the child's talk in one or two of Miss Bryant's which endangers their sincerity. The books of stories for children are improving each year. But it is earnestly to be hoped that our clever collectors and editors, of whom there are so many now-a-days, will in time study English composition and literature more thoroughly and develop that fine taste which alone can give us the best editions of books for children.

ALICE O'GRADY

CHICAGO NORMAL SCHOOL

The First Book, Song and Story for Little Children. Edited by E. E. SPEIGHT, B.A., AND CLARA L. THOMSON. The Norland Press. Shaldon, South Devon, England. Pp. 223.

At last we have found "something new under the sun"—a first reader which begins with something worth reading and maintains that standard throughout the book. There is not one page of mere device for teaching words, regardless of content.

The First Book, edited by E. E. Speight and Clara L. Thomson, is an English publication of the Norland Press. "It is," as the preface states, "the outcome of an idea which is in the air—the idea that the endless scroll of beautiful and wonderful stories which research in folklore is steadily unfolding is not only a matter of interest to students of psychology and anthropology, but one of great moment in the education of little children. Ardent collectors in all parts of the world are providing a rich heritage for the children of today and tomorrow, to take the place of the old-fashioned reading-books with their undesirable subject-matter and impossible manner of writing."

All of us who have plowed through the drift of primers and first readers which have threatened to bury the best educational ideals of what children's reading should be, look upon this new attempt with delight. Those of us who have had our hopes of rich material raised high by the attractive binding, beautiful printing, enchanting pictures, only to be dashed to earth by the inane content, and who have felt that this sugar-coated mockery was not only an indignity to rational children but a serious pedagogic evil, welcome with heartfelt gratitude this honest attempt to make a book for very little children which should be rich in the best literary material.

Here we have the good printing, beautiful pictures, plus real content. The plan of the book, too, shows that technical difficulties have been considered, and children's ability has been measured so that we find much repetition of words and phrases and an orderly gradation in the difficulties of reading. That this arrangement is not entirely for the sake of learning words adds to its interest. The editors say, "The stress is laid on the idea of order, for from the simplest rhymes, such as 'Graufa Grig' or 'Doodle, doodle, doo,' to elaborate stories like 'Cinderella' or 'Hine Moa,' there is for each variant only one proper sequence of events and one right choice of words and phrases, which must be strictly observed, and insistence upon this observance is good training for little minds."

Part II is unique in its attempt to "re-introduce the singing of folksongs into our homes." We hope it may give children a basis of merry melody which will direct their taste into such lines that afterward they may be able to distinguish between real song and the rubbish which so often passes for music in this country.

When the World Was Young. By ELIZABETH V. BROWN, Supervisor of Primary Schools, Washington, D. C. New York and Chicago: Globe School Book Publishing Co. Pp. 160.

When the World Was Young is another sign that times are changing and that content is beginning to be considered in the making of a reader.

The general idea of this reader may be gotten from some selections from the

Table of Contents as follows: "The Story of the Food Quest," "Homes of Many Lands," "Queer Clothes for Queer Weavers," "The Story of Transportation," "Killing of Time," "Music of Many Centuries." The preface states that, "Playing Indian is perhaps the modern child's closest contact with primitive life. The warpath, the hunt, the chase, revive the aboriginal instincts; but the patient steps by which men have climbed from savagery to civilization, through the exercise of invention and industry, are often overlooked. It is the aim of these stories to stimulate an interest in culture history and from a knowledge of past conditions to build up an idea of the meaning of the arts of life in our own time."

To the teacher who is using this industrial history the book is suggestive. The material is carefully selected and the trend of the work evident. One wishes that each topic had been more dramatically and more fully developed and that something more of grace and literary quality had gone into the telling. Nevertheless let us be thankful for these signs of a better day when we shall have material so rich that it will be worth while for a child to make the necessary effort to read.

E. A. W.

Rhymes and Stories and Fairy Tales. Compiled and edited by MARY FLORENCE LANSING. The Open Road Library. Boston and New York: Ginn & Co., 1907. Pp. 182 and 179.

The first of these little books represents the effort to furnish reading-matter for little children which will contain the essentials of interest and of good form, and at the same time secure such repetition of words and phrases as will carry the beginners on to a control of the ideas expressed with the least possible obstruction. The rhymes from Mother Goose and other sources which fill the first part of the book are well selected for this purpose. The stories which follow are drawn from nursery classics and are very simply told—perhaps too simply to be artistic in form. However, the simplicity makes them readable by children and they are superior in childish charm to much of the pointless matter that fills too many beginners' readers.

Fairy Tales is a first volume of a series. It contains some of the old fairy tales with which every child should be familiar. The compiler has left the popular modern versions with their often fanciful and irrelevant additions and has gone to the best sources among the earlier compilers. In the list of writers whose forms she has preferred stand the names of Dasent, Grimm, Perrault, and Madame D'Aulnay. These names should insure a certain measure of literary merit, and prefer a claim to attention. Whether for supplementary reading at school or for home browsing the book should be appropriate for children who are still in the fairy-tale phase of interest in stories.

Gulliver's Travels for Children. By JAMES BALDWIN. New York: American Book Co., 1908. Pp. 172. $0.35.

Gulliver's Travels for Children is a successful attempt to abridge and paraphrase that classic in something of Swift's own simple, unadorned style, omitting the coarseness, bitterness, and tediousness, while preserving the humor which will always endear these adventures to the young reader.

JESSIE ELIZABETH BLACK

BOOKS RECEIVED

AMERICAN BOOK COMPANY, NEW YORK

How the World Is Clothed. A Geographical Reader. By FRANK GEORGE CARPENTER. Cloth. Pp. 340. Illustrated. $0.60.

A Punctuation Primer. By FRANCES M. PERRY. Cloth. Pp. 103. $0.30.

Arnold's Fritz auf Ferien. Edited by MAY THOMAS. Cloth. Pp. 112. $0.30.

Practical Elementary Algebra. By JOSEPH V. COLLINS. Cloth. Pp. 240. $1.00.

Physics for Secondary Schools. By CHARLES F. ADAMS. Cloth. Illustrated. Pp. 490. $1.20.

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